335 INVITED

Coping with breast cancer in the family

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A diagnosis of breast cancer is devastating for any woman. For a young mother with small children it is a particularly difficult situation to cope with, not only for herself but also for all the family. How much should the children be told? How will life change after breast cancer? When over a period of twenty years another two diagnoses of breast cancer are made, these questions become even more daunting.

The coping mechanism of the family changes as the children grow older, but the basic instinct of the parents to protect their children as much as possible, while at the same time keeping them truthfully informed, does not change. Nothing is worse for the young, imaginative child than to be left wondering what is happening around them. As young adults the children are able to understand more fully about breast cancer and its implications and to participate in important decisions.

For the mother 'the patient' having to keep life "normal" can be quite stressful at times. However, this policy brings its own rewards as the children mature into caring adults.

336 INVITED

The psycho-social implications of breast cancer: the role of the psychologist

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As it is well known in the scientific literature, breast cancer patients show a wide range of psychological problems such as: anxiety, depression, fear, reduction in activity levels, difficulties with sexuality and body image, etc. Although not all breast cancer patients suffer from psychological distress, it is true that a high percentage of them refer some degree of psychological discomfort along the course of diagnosis, treatment, and afterwards, in their life as survivors.

But helping breast cancer patients to overcome those problems is just one of the fields in which psycho-oncologists develop their work. Psycho-social implications of breast cancer go beyond the single patient and have an effect on the family, on the general population, and on the National Health Policy.

Psycho-oncologists contribute with their specialized knowledge to the improvement of other aspects in breast cancer, such as:

– Psycho-social research in genetic counselling, quality of life, quality of care (ie. effectiveness of psychological treatments), and Epidemiology.

– Training health professionals in communication skills, burnout prevention and decision-making tools.

– Primary prevention, designing programmes to modify harmful patterns of life and to increase awareness about breast cancer.

– Early detection, helping women to cope with fear of mammograms, and supporting those with positive results.

To assure a high quality and comprehensive care in breast cancer, the core interdisciplinary team in charge of managing health resources and planning treatments and actions should, by all means, include specialists in Psycho-oncology.

337 INVITED

The role of the social worker

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The social worker helps patients and their families to cope with cancer emotionally and offers practical support when needed. In this work it is important to start from the principle of coherence between fysical, emotional, social, spiritual and material aspects of life! And: emphasis lies on supporting the responsability and strength of the client.

Of course the help needed in the various stages of illness differs:

In the first period, the diagnostic fase, women are busy dealing with questions like shall I survive, what kind of surgery do I need or do I choose, what kind of further treatment will be necessary, how can I endure serious medical treatments.

Furthermore they suffer from fear to die and at the same time they have to be practical and organize everything at home. In this period a social worker offers practical help like organizing home care as well as support in dealing with feelings like fear, anger and so on. Also support is given in decision making and in finding tools needed for communication. The social worker helps people to get in touch with one's own sources of strength.

In the second period, a few months after treatment, when 'life goes on', women experience big changes in their lives, it will never be like before. Who am I as a woman? One has to deal with changes in the body, with mutilations, with lymphoedema. The fear of getting cancer for a second time will be forever present. Having had cancer influence on the relation with the partner, on sexuality, on family life, on work. Women can experience extreme fatigue which handicaps them enormously. Moreover, genetic features can be suspected or discovered. These also have great consequences of various aspects of life. In this period, a social worker counsels women individually and in groups. Individually we can explore and go more deeply into one's personal history and situation. Most important is to acknowledge the seriousness of the woman's complaints and to give attention to her feelings. Moreover, methods for disidentification, - which means learning to go into feelings and afterwards to discharge them - are used as a source of help. Support in groups is useful for people, when they want to meet others being in the same situation for recognition of various emotions and for the possibility to exchange information.

In the last phase, when there's no possibility for cure, the social worker helps patient and family to deal with the personal and social problems of illness, disability and impending death. In short, the social worker offers help as well on the psychological level as on the social level.

The main goal is to support women in finding their strength, their own way to live and to cope with their breast cancer.

Friday, 22 March 2002 16:30–18:00

PROFFERED PAPERS

Side effects of treatment

338 ORAL

Evaluation of cardiac and lung damage following irradiation for breast carcinoma

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The results of recently published randomized clinical trials strongly indicate that loco-regional radiotherapy after modified radical mastectomy may improve both disease free survival and also overall survival in breast cancer patients. In addition, it is also shown that modern RT technique can result in a lower cardiac and lung dose and, as a consequence, reduce cardiovascular morbidity and mortality observed in older trials but the risk of cardiac and lung toxicity is not well established.

The aim of the study was to assess prospectively the occurrence and localisation of myocardial perfusion deffects in left- in comparison to right-sided mastectomized or locally advanced breast cancer patients as well as to delineate lung complications following radical radiotherapy.

Study group consisted of 47 patients aged 32 to 66 years (median 48) with right- and left-sided disease in respectively 23 and 24 cases, treated in our institution between 1997 and 1999. Thirty-eight patients were reffered for radiotherapy after surgical procedures and 9 patients had locally advanced disease. Radiotherapy was delivered with the use of Co60 or LA electron irradiation of the thoracic wall in mastectomized patients, or two tangential photon beams in other patients. All patients received elective radiotherapy to the locoregonal lymph nodes. Clinical examination, lung scintigraphy and myocardial scintigraphy were performed before treatment, and after 6 and 12 months during the follow-up period. Grade 1-2 fatigue, and grade 1-2 dyspnoe occurred in eight patients each. Scintigraphic abnormalities of different degree occurred in the majority of patients at 6 and 12 months following radiotherapy. There were two cases of clinically relevant diffuse changes, and two cases of pulmonary microembolism. No cases of myocardial infarct or cardiac failure were recorded. Fourteen of 24 patients with left-sided disease had slight perfusion deffects seen on myocardial scintigrams and localized in the apex and anterior wall of the heart.

The tolerance of radical RT was acceptable in all treated patients. Presented study does not indicate that the use of modern technique of RT causes an excess cardiovascular and lung morbidity. However, the small number of patients and short follow-up does not allow strong conclusion to be drawn.

339 ORAL

Cost analysis of treatment-related adverse events with anastrozole (Arimidex') versus tamoxifen in postmenopausal women with hormone receptor-positive (HR+) advanced breast cancer (ABC): a UK perspective

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Introduction: A retrospective analysis of combined data from 2 large, randomised trials in postmenopausal women with HR+ABC showed the median time to progression was significantly longer with anastrozole (n = 305) than tamoxifen(n=306)when administered as 1st-line therapy [10.7vs6.4mths;P=0.022,2-sided. Both anastrozole and tamoxifen were well tolerated although, in all-patient analysis(n=1021), anastrozole led to significantly fewer venous thromboembolic events(P=0.043)and approx. half as many reports of vaginal bleeding compared with tamoxifen.An analysis was performed comparing costs associated with treating adverse events in patients with HR+ABC receiving anastrozole or tamoxifen from the perspective of the National Health Service(NHS)or other UK 3rd-party payer.

Methods: Adverse event-related resource utilisation data were taken from 2 large trials comparing anastrozole(1mg/day) and tamoxifen(20mg/day)as 1st-line therapy in patients with ABC(n=1021).Only data from HR+ patients were considered in the analysis(n=611), since it is this patient population who will benefit from endocrine therapy.Adverse event-related costs were calculated by multiplying the number of hospital days or outpatient visits associated with drug-related toxicity by the costs of these services.Unit costs were obtained from published UK sources.Treatment by country interaction was tested and appropriate sensitivity analyses were carried out.Treatment differences were tested for statistical significance using Pearson's chi-square test.The time horizon of the analysis was from initiation of treatment to disease progression.

Results: The total number of adverse event-related days spent in hospital(1272 vs 637 days;plt;.05) and in outpatient care(1122 vs 799 days;p<.05),was greater with tamoxifen than anastrozole.On a per patient basis, the mean number of inpatient days due to adverse events was 4.16 with tamoxifen vs 2.09 with anastrozole(p<.05).The incremental cost of treating adverse events favoured anastrozole by £604/patient compared with tamoxifen but this was not statistically significant at the 0.05 level.

Conclusions: When administered as a 1st-line agent until relapse,in women with HR+ metastatic breast cancer, anastrozole is associated with significantly reduced need for toxicity-related inpatient & outpatient care than tamoxifen and lower related costs.The perspective was that of the NHS and other 3rd-party payers in the UK.

References

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340 ORAL

Long-term risk of second cancers following breast cancer treatment

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We studied second cancer risk in a group of 3900 patients who were treated in the NKI and the DDHK for early stage breast cancer between 1970 and 1981. Preliminary analyses were performed for 1531 patients from the NKI. For 94% of the patients medical status was complete up to at least January 1998. Median follow-up time was 11.4 years; for 25% of the patients follow-up time was longer than 20 years. The diagnosis of contralateral breast cancer (CLBC) was only accepted when no distant metastases were manifest up to 6 months after CLBC diagnosis (n = 107). First results showed that 244 patients developed a second cancer (excl. basal cell carcinoma of the skin) as compared to 129 cases expected on the basis of cancer incidence rates in the general population (standardized incidence ratio (SIR): 1.9; 95% CI: 1.7 * 2.1). Significantly increased SIRs were observed for CLBC (SIR = 2.6; 95% CI: 2.1 * 3.1), lung cancer (SIR = 3.1; 95% CI: 1.9 * 4.8) and soft tissue sarcoma (SIR = 6.1; 95% CI: 1.3 * 17.7). The risk of leukemia was raised (SIR = 2.3) but not significantly so. After 20 years of follow-up, the SIR of lung cancer had increased to 8.8 (95% CI: 3.5 * 18.0), which was fourfold higher than in the interval up to 20 years.When comparing irradiated patients with patients treated with mastectomy only, the excess lung cancer risk was seen solely in the first group (SIR = 4.6 vs. SIR = 0.9). Among patients under age 45 (n = 394) the risk of lung cancer was much higher (SIR = 6.5; 95% CI: 2.8 * 12.8) than in patients of 55 years and older (n = 572), (SIR = 0.9; CI: 0.1 * 3.4), possibly due to higher smoking rates in younger women. Interaction between smoking and radiation is being investigated. For CLBC there was no trend over time. Among patients under age 45 the risk of CLBC was twofold higher than in the older group (SIR = 3.8, vs. SIR = 1.9; RR = 2.0; 95% CI: 1.2 * 3.5). Patients treated with RT (without chemotherapy (CT)) had a similar risk of CLBC as patients treated with mastectomy only (SIR = 3.0 resp. SIR = 2.9). However, in patients treated with RT and CT (SIR = 1.0), a significant protective effect of CT was seen. We observed the opposite pattern for leukemia: patients who received CT in addition to RT had an almost six times higher risk than patients treated with RT without CT (SIR = 8.3, vs. SIR = 1.4; RR = 5.8; 95% CI: 0.7 - 70). During the EORTC BCC3 conference results will be presented for the entire cohort of 3900 patients.

341 ORAL

Influence of cumulative dose (CD) of trastuzumab administred with taxanes vs pre-treatment CD of anthracyclin on left ventricular ejection fraction (LVEF) of metastatic breast cancer (MBC) patients

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Previous anthracyclin CD is proposed to explain the frequent LVEF decrease observed during trastuzumab (Fornier, Sem. Oncol., 2000). From July 1999, 28 MBC patients were treated with weekly trastuzumab (4 mg/kg loading dose then 2 mg/kg), associated with weekly paclitaxel (13/28) or 3-weekly docetaxel (15/28). Median trastuzumab CD and pre-treatment anthracyclin CD were respectively 28 mg/kg [4-92] and 411 mg/m2 [0-665]. Treatment discontinuation was due to disease progression (7/28), end of treatment (3/28), bad general condition (1/28), LVEF decrease (6/28) (LVEF was estimated by scintigraphy or echography); 11/28 pts are still treated. LVEF decrease included 8 pts with Grade I and 5 pts with Grade II. Two out of nine Grade I cardiac toxicity (decrease of 15 and 18% from LVEF baseline value respectively) were seen in patients without previous anthracyclin. Then we studied the relationship between 1) the anthracyclin CD (in equivalent dose of adriamycin, factor 0.7 for epirubicin and 7 for mitoxantrone) or 2) the trastuzumab CD with the longitudinal LVEF variation. Using a linear test, LVEF decrease was shown to be significantly correlated with trastuzumab CD ($p < 10\text{-}5$) but not with anthracyclin CD ($p = 0.28$). Trastuzumab administred with taxanes could be as relevant as pre-treatment anthracyclin CD for LVEF decrease in MBC patients.

342 ORAL

Explanations for venous thromboembolism during chemotherapy

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Background: Venous thromboembolism (VTE) is a recognised complication of cancer, particularly during chemotherapy. Chemotherapy induced hypercoagulability may be stimulated through endothelial cell (EC) activation, an acute phase response or reduced fibrinolysis.

Methods: Patients undergoing chemotherapy underwent venous blood sampling before, 1,3,5 and 7 days, and 3 months after treatment. Samples were assayed for Vascular Cell Adhesion Molecule (VCAM-1), E-selectin, C-reactive protein (CRP) (n=25) and the fibrinolytic molecules tissue-type plasminogen activator (tPA) and urokinase-type plasminogen activator (uPA) (n=34).

Results: Chemotherapy stimulated a significant and progressive fall in both E-selectin and VCAM-1 over the first week, from a median (IQR) of 40.3 (27.6-56.2) ng/ml and 416 (348-669) ng/ml to 29.1 (25.1-45.8) ng/ml and 405 (346-585) ng/ml respectively. CRP fell significantly from 4.7 (1-11.9) mg/l to 2.8 (0.9-10.7) mg/l. E-selectin recovered to above pre-chemotherapy levels at 47.1 (32.5-55.8) ng/ml by three months as did VCAM-1 at 485 (377-552) ng/ml, but CRP remained low. E-selectin and VCAM-1 were consistently higher in advanced compared to early cancers. At baseline, CRP was also higher in advanced, at 9.0 (3.8-18.6) mg/l, compared to early cancers, at 1.59 (0.7-5.84) mg/l (p=0.05), and remained so throughout. Chemotherapy did not induce significant changes in uPA and tPA.

Conclusions: The fall in E-selectin and VCAM-1 may be due to consumption of adhesion molecules by activated EC, reduced proteolysis, or competitive binding to tumour cell fragments, and this alteration may play a role in the chemotherapy-induced hypercoagulability of cancer. Hypercoagulability during chemotherapy is not due to an acute phase response or a reduction in fibrinolysis

343 ORAL

Immediate toxicity among Chinese patients undergoing adjuvant doxorubicin and cyclophosphamide for early breast cancer- a single institute experience with comparison to historic Western series

B. Ma[1], W. Yeo[1], W.M. Ho[1], P. Hui[1], P.J. Johnson[1]. [1] *Chinese University of Hong Kong, Clinical Oncology, Hong Kong SAR, China*

Background: Acute toxicities of adjuvant chemotherapy for breast cancer have been well-reported in the West. Corresponding data is lacking in Chinese patients. The objectives of this study were: [1] to document the incidence of acute haematological and non-haematological toxicity in Chinese women with early breast cancer who underwent adjuvant AC (doxorubicin 60mg/m2 and cyclophosphamide 600mg/m2, given 3-weekly for 4 cycles without granulocyte-stimulating factor), and [2] to compare the data with historic Western cohort.

Patients and Methods: Between 1-8-1998 and 31-10-1999, 85 breast cancer patients received adjuvant AC in our institute. Acute toxicity grading was based on the Common Toxicity Criteria. For comparison, the NSABP B-15 study was chosen based on similar patient characteristics and chemotherapeutic regimen.

Results: 19 (22%) patients had co-existing medical conditions, including 9 with chronic hepatitis B virus (HBV) infection. 84 (99%) had adjuvant radiotherapy following AC. 82 (96%) completed the 4 cycles; 3 did not: 2 due to patient refusal and 1 had ischaemic chest pain. Of a total of 335 cycles delivered, 302 cycles (90%) had nadir blood counts documented. Dose delivery was good with only 5% of the cycles delayed by > 7 days due to neutropenia. Dose reduction was not required. These were comparable to the NSABP result. Haematological toxicity: Grade 3 and 4 neutropenia occurred respectively in 117 cycles (35%) and 26 cycles (8%) - corresponding to 44 (52%) and 21 (25%) patients respectively. These were significantly higher than that reported in the NSABP study. Consistent with the NSABP series, only 5.5% of patients developed neutropenic fever and thrombocytopenia was rare. Non-haematological toxicity: When compared with NSABP, the followings were more common in the current series: moderate to severe vomiting (5% Vs 13%), and acute hepatotoxicity (0 Vs 9.4%; in which 63% occurred in HBV carriers, and 38% were due to HBV reactivation). There was no treatment related death in either series.

Conclusion: When compared to Caucasian patients, the higher myelotoxicity in Chinese patients may be related to ethnic variation in susceptibility to chemotherapy-related toxicity, lower body mass index with higher percentage of body fat composition, and the popular practice of concurrent alternative medicine during chemotherapy. The higher incidence of hepatoxicity was possibly associated with endemic chronic HBV infection in this geographical area.

344 POSTER

Patients (pts) with solid tumors or lymphoproliferative malignancies (lympho) have a similar dose response to darbepoetin alfa

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The definition of the optimal dose for erythropoietic agents in major subpopulations such as lympho vs solid tumors may provide more effective management of pts with anemia. Darbepoetin alfa (Aranesp™) is a glycoprotein that stimulates erythropoiesis by the same mechanism as rHuEPO. Two similar dose-finding studies were conducted in anemic pts (hemoglobin [hgb] ≤ 11 g/dL) with solid tumors or lympho who were receiving chemotherapy (ctx). Pts had an ECOG status of 0 to 2, were not iron deficient, and had not received rHuEPO therapy within 8 wks or >2 RBC transfusions within 4 wks before the study. Study drug was administered SC once per wk for up to 12 wks. No dose increase for inadequate response was permitted. Hgb response is defined as a ≥2 g/dL increase in hgb from baseline in the absence of a RBC transfusion in the preceding 28 days, The adverse event profile was similar between tumor types and consistent with that expected for cancer pts receiving ctx. The results indicate that darbepoetin alfa is effective and safe for reversing ctx-induced anemia in both treatment settings, with no apparent difference in the dose-response relationship.

	1.0 μg/kg		2.25 μg/kg		4.5 μg/kg	
	Solid	Lymph	Solid	Lymph	Solid	Lymph
# of subjects per group	36	11	59	22	29	22
%Pts with hgb response	43	45	52	55	76	62
(95% CI)	(25, 61)	(16, 75)	(39, 66)	(34, 76)	(59, 94)	(41, 83)
Mean (SE) change in hgb after 12 wks (g/dL)	1.31 (0.33)	1.56 (0.86)	1.45 (0.32)	1.64 (0.30)	2.81 (0.53)	2.46 (0.40)

345 POSTER

Darbepoetin alfa administered once every 3 weeks aleviates anemia in patients (pts) with solid tumor

D. Kotasek, J. Mackey, G. Steger, R. Berg, E. Poulsen, A. Colowick. *The Darbepoetin alfa 980291 Study Group; University Clinic for Internal Medicine and Oncology, Wien, Austria*

Darbepoetin alfa (Aranesp™) is a glycoprotein that stimulates erythropoiesis. This study was designed to assess if the prolonged $t_{1/2}$ of darbepoetin alfa allows less frequent dosing. Anemic pts (hemoglobin [hgb] ≤11 g/dL) receiving cyclic chemotherapy with an ECOG status of 0–2 who were not iron deficient were randomized (4:1) to either darbepoetin alfa 4.5, 6.75, 9.0, 12.0 μg/kg/Q3W or placebo. Hgb response and correction were defined as an increase of ≥2 g/dL from baseline and a hgb ≥12 g/dL, respectively, in the absence of a RBC tfn during the preceding 28 days. The most common tumors were gynecologic, breast, lung, or gastrointestinal. Darbepoetin alfa appears to be well tolerated; adverse events are consistent with events in cancer pts receiving chemotherapy.

	Darbepoetin alfa (μg/kg/Q3W)				
	Placebo n = 51	4.5 n = 32	6.75 n = 17	9.0 n = 46	12.0 n = 28
$hgb_{Baseline}$, mean (sd)	9.9 (1.1)	10.2 (0.9)	9.7 (1.0)	9.8 (1.1)	10.4 (08)
Response, % (95% CI)	14 (3.24)	24 (8.39)	48 (22.74)	51 (35.67)	62 (41.82)
Correction, % (95% CI)	26 (12.40)	48 (30.66)	42 (15.68)	50 (34.67)	69 (48.90)
RBC tfns wks 5-12, % (95% CI)	46 (32.61)	25 (9.41)	28 (4.51)	30 (16.44)	24 (7.41)

The results suggest that darbepoetin alfa is clinically effective administered Q3W.

346 POSTER

Study on the incidence and possible risk factors influencing development of postmastectomy arm lymphoedema

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The incidence of postmastectomy arm edema (PME) varies in the literature from 0,8 to 41,8%. This variety is due to the definition (= difference in circumference of both arms) one gives to lymphedema, the number and source of patients, follow-up period and different measurement techniques. Major contribution to this complication is the damage that is produced to the lymph vessels by surgery. Additional factors like axillar radiation, axillar dissection and arm infection are related to PME development. Regarding radiation dose, number of dissected lymph nodes, nodal pathological condition, age, weight, etc, no consensus is found.

The aim of our study is to determine the incidence and possible risk factors provoking PME. To do so, we interviewed, by means of a questionnaire, 285 women who underwent unilateral breast cancer surgery, containing questions on treatment related factors, disease related factors, patient- and clinical related factors and ADL activities. Arm circumference was measured at 15 cm proximal and 10 cm distal of the olecranon; edema was defined as 2,5 cm difference between both arms. Mean time between surgery and interview was 59 months (1-292m) and mean age of the subjects was 63 years(36-83y). Statistics was performed with a chi squared test and significant level was choosen at 5%.

Results: we found a PME incidence of 23% and this occurred in 62% within the first post operative year. The pathological condition of the lymph

nodes and supraclavicular and/or axillar radiation are the only factors that have a significant influence(p is smaller or equal than 0.05) on PME development. 50% of the women with PME reproted moderate to major ADL restrictions, due to the arm swelling

With this study, we hope to contribute to the better understanding of the development and provocing factors of PME.

347 POSTER

Ocular toxicity from standard dose adjuvant tamoxifen therapy

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Introduction: The existence of ocular changes related to Tamoxifen is not in question. However, there is a wide variation in estimates of its prevalence and any effects it may have upon visual performance. A retrospective study was done to assess the true incidence and study the ocular changes.

Methods: 998 patients with breast cancer on Tamoxifen were evaluated by an optometrist in the breast clinic. All patients with ocular changes were referred on to the consultant ophthalmologist for further assessment.

Results: In the 998 patient studied retinopathy was evident in 28 patients and keratopathy in 37 patients. The total incidence of ocular changes was 6.5%. In the patients with retinopathy the cumulative dose of Tamoxifen was 2 to 55gms with a mean of 20gms and in the keratopathy group it was 3 to 47gms with a mean of 20.8gms. Vision was affected in 7 (25%) of patients in the retinopathy group but none of the patients with keratopathy had their vision affected.

Conclusions: Ocular toxicity attributable to Tamoxifen is not simply dose related and visual performance may be affected even at low doses.

348 POSTER

The analysis of the frequency and evolution of lung fibrosis after postoperative chemo-radiotherapy in breast cancer patients

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Aim: The aim of the study was to evaluate the frequency and the evolution of lung fibrosis, as a late toxicity, in breast cancer patients, treated with mastectomy and adjuvant sequential chemo-radiotherapy.

Material and Methods: Forty seven women (mean age 47 years), with stage II and III breast cancer, were treated with mastectomy and sequential chemo- and radiotherapy. Forty women received chemotherapy including antracyclines, 7- without antracyclines. Radiotherapy included chest wall and regional lymph nodes, the specified dose was 45-50 Gy, administered in dialy fraction of 2 Gy. The high resolution computed tomography (HRCT) of the lungs was performed after a mean time of 17 months (13-28 months), and then, after a mean time of 33 months (28-58 months). The analysis of the those - volume histograms and the depth of the isodose 50% was assessed in all cases.

Results: The first examination revealed no changes in 24 patients. There were 19 fibrotic changes in lung apex and 19 parietal fibrosis. In the second examination, there were no changes in 24 patients. There were fibrosis in lung apex in 22 patients and parietal fibrosis in 13 patients. All these changes were discrete, asymptomatic, and parietal fibrosis were invisible in chest X-ray. The analysis of the evolution of fibrotic changes revealed, that parietal fibrosis had a tendency to regression (regression in 6 cases, no progression, p=0.031), but the apical ones were unpredictable: some of them had a tendency to regression (4 cases), other- to regression (8 cases, p=0.549). The probability of parietal fibrosis did not depend on time of chemotherapy (p=0.64), but significantly depended on the depth of isodose 50% in the lung ($p<0.05$).

Conclusions: Postoperative radiotherapy, as an element of combined adjuvant treatment in breast cancer, administered in conventional, fractionated doses, causes no clinically significant lesions in the lungs. The probability of lung fibrosis depended on the depth of isodose 50% in the lung.

349 POSTER

Steroid receptors and insulin-like growth factor expression in the endometrium of breast cancer patients on tamoxifen compared with controls

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Patients with breast cancer on adjuvant tamoxifen therapy are at increased risk of developing endometrial cancer. In rats, this is due to upregulation of insulin-like growth factor 1 (IGF-1) and downregulation of its major binding protein (IGFBP-3). The aim of this study was to examine whether there was any evidence for this in humans by comparing expression of oestrogen receptor (ER), preogesterone receptor (PR), IGF-1 AND IGFBP-3 in the endometrium of patients on tamoxifen with control patients. In addition, Ki67 staining was performed to examine whether there were correlations with proliferation and receptor/growth factor expression.

Immunocytochemical staining for ER, PR, IGF-1, IGFBP-3 and Ki67 was performed on endometrial tissue taken from 20 patients on tamoxifen and 22 patients who had undergone gynaecological surgery (controls). The mean age of the 2 groups of patients was 56 and 58 years respectively. In the tamoxifen group, 7 were pre/peri menopausal and 13 were postmenopausal. In the controls, 5 were premenopausal, 10 postmenopausal and 7 were unknown. Immunocytochemical staining was graded as 0 (no staining) to 3 (strong staining). Ki67 was expressed as a percentage. In the tamoxifen group, 2 had cancer and 18 had benign conditions. In the controls, 10 patients had cancer and 12 patients had benign changes.

The average staining intensity in glands for benign changes in the tamoxifen and control groups was very similar for ER (2.4 vs 2.4), PR (2.3 vs 1.7), IGF-1 (2.25 vs 2.9) and IGFBP-3 (0.8 vs 0.8). The staining intensity in cancer in patients and controls for ER (1 vs 0.9), PR (0.5 vs 0.2), IGF-1 (2 vs 2) and IGFBP-3 (0.8 vs 0.8) was also similar but decreased compared to staining in benign changes. Ki67 staining was high in premenopausal endometrium. In postmenopausal endometrium, proliferative activity is mostly seen in the glandular epithelium in hyperplasia, polyps and cancer. There did not seem to be any obvious relationship with steroid receptor and IGF receptors.

In conclusion, there was no difference in expression on steroid receptors or IGF-1 and IGFBP-3 in the endometrium of patients on tamoxifen compared with controls for either benign or malignant conditions.

350 POSTER

Leukaemia and myelodysplasia after breast cancer: a national case-control study evaluating the risk associated with anthracyclines and anthracenedione

M.C. Le Deley[1], B. Cutuli[2], S. Clisant[1], S. Delaloge[1], F. Suzan[1], A. Shamsaldin[1], X. Troussard[3], P. Fenaux[4], C. Hill[1]. *[1] IGR, Villejuif; [2] Clinique Courlancy, Reims; [3] CHU, Caen; [4] CHU, Lille, France*

Antracyclines/anthracenedione based chemotherapy regimen are widely used to treat breast cancer. The risk of leukaemia after such treatments needs to be evaluated.

Objective: To study risk factors of leukaemia/myelodysplasia after a breast cancer, particularly to estimate the risk associated with anthracyclines and anthracenedione, according to cumulative dose and schedule, taking into account other factors such as radiotherapy, alkylating agents or genetic characteristics.

Methods: A questionnaire was sent in June 2001 to all the oncologists and haematologists working in France in order to identify the cases. Cases are women treated for a breast cancer after 1984 who subsequently developed a leukaemia (acute myeloblastic or lymphoblastic leukaemia, or chronic myelocytic leukaemia) or a myelodysplasic syndrome. Each case is matched to three controls for age, date of first cancer, centre and duration of follow-up. All haematological reports are reviewed. Data on first malignancy (diagnosis, stage of TNM, PEV, disease outcome) are collected as well as all chemotherapy doses (calculation of cumulative dose for each drug and description of treatment schedule), radiotherapy and hormonal treatment, use of haematological growth factors and family cancer history. A radiation dosimetry is performed, with an individual calculation of the average dose received by the active bone marrow. Assuming that 30% of the women treated for a breast cancer receive anthracenedione, 200 cases matched to 600 controls are necessary to have 95% chances to detect a risk increased by a factor 2, using a two-sided test and a type I error of 1%.

Results: Presently, 268 cases have been identified, and data have been obtained for 87:65 acute leukaemia, 18 myelodysplasic syndrome and 4 chronic myelocytic leukemia. 93% received radiation therapy, 67% chemotherapy, 48% hormonal therapy.

Conclusion: The large sample size of this study should lead, in a few months, to a precise estimation of the effects of dose and schedule of anthracyclines and anthracedione on the risk of leukaemia/myelosyplasia after a breast cancer, taking into account other important risk factors.

351 POSTER

Breast cancer patients' use of a touchscreen in the day treatment area to record toxicity, health state and quality of life - a 12 month experience

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Between the start and end of 2000, 300 patients with breast cancer had complete treatment records against which to assess their recorded symptoms attributable to disease and the effects of treatment on their lives whilst attending the day treatment area for chemotherapy. They were asked to use a touch screen questionnaire at each attendance for chemotherapy and individuals used the screen from once to 14 times. The screen questionnaire was derived from standard recording systems to assess toxicity severity and duration (31 questions) with 3 added questions on the patient's assessment of her health state, global quality of life and performance status.

There were 868 'form' completions, 627 adjuvant or neoadjuvant and 241 metastatic. The data were stored in MS Access allowing ease of data storage and analysis. Patient data were then matched to the department treatment booking database to link outcomes against disease stage and treatment given.

Probably reflecting the trend to use more intensive therapy in the adjuvant setting, there was a similar distribution of toxicities and impairment of quality of life in the two groups. The other main finding was a higher incidence of fatigue, anorexia, weight loss and mucositis in patients aged 65 and over. Individuals completing the forms more than once showed only minor inconsistencies across categories. For both patient groups the duration of symptoms tended to increase with symptom severity.

This is a rapid and accurate method to record toxicity, functional health state, formal performance status and quality of life in a self-report, real-time format. It is quick, patient-friendly and is an extremely powerful, inexpensive technique for recording auditable data for non-trial as well as trial patients at all stages of disease for patients on treatment. Its use may be adapted for patients on oral or hormonal therapy.

352 POSTER

Correlation between axillary vein abnormalities and breast cancer-related lymphoedema (BCRL) - a prospective study

S. Pain, C. Bainbridge, A. Purushotham. *Cambridge Breast Unit, Addenbrooke's Hospital, Cambridge, United Kingdom*

Introduction: This study aims to investigate the affect of axillary clearance as part of breast cancer treatment on the axillary vein, and to correlate venous changes with development of BCRL.

Methods: In all, 83 women with a new diagnosis of primary operable breast cancer were recruited to the study. Ultrasound assessment of the axillary vein on both sides was performed prior to surgery to include a Level II or Level III axillary clearance, and 3 months post-operatively. Changes in anatomy were noted (such as stenosis or collateral vessel enlargement), movement of the vessel wall with the respiratory cycle, as well as Doppler assessment of flow within the vein. At the same visits, arm volume was calculated from circumferential measurements at 4cm intervals up the arm.

Results: A total of 83.1% of patients were found to have enlargement of the ipsilateral arm relative to the contralateral arm at the post-operative visit (mean 3.5%). 14.5% (12/83) had significant swelling (>10% relative volume increase of all or part of the arm), with mild swelling (5-10% relative volume increase) in a further 28.9%. In all, 4 patients were found to have post-operative stenosis of the axillary vein with alteration in flow, 2 of whom had significant and the other 2 mild swelling. Loss of normal vessel wall movement with respiration (taken to be a marker of the degree of fibrosis within the axilla) was noted in 24.1% of cases, but did not correlate with alteration in arm volume.

Conclusion: This study shows that abnormalities of the axillary vein occur as a result of axillary clearance for the treatment of breast cancer. Stenosis of the vein with alteration in flow is associated with the development of BCRL.

353 POSTER

Late lung and soft tissue injuries following postoperative radiotherapy in breast cancer patients. Validation of LENT-SOMA system

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Background: Radiation-induced injuries have long been considered an important aspect of breast cancer radiotherapy. Quantitative assessment of radiation-induced toxicities requires development of more precise and useful scoring instruments. The new LENT-SOMA scoring system proposed by RTOG and EORTC is expected to meet expectations and conditions of both clinical trials and daily practice.

Study Aims: 1. To assess quantitatively late radiation pulmonary and soft tissue reactions in breast cancer patients treated with postoperative radiotherapy. 2. To check the feasibility and usefulness of LENT-SOMA scoring system for late radiation-induced injuries.

Patients and Methods: The subject of this study were 54 breast cancer patients (age: 39-74) treated postoperatively with high-energy radiation therapy between 1991 and 1999. Chest wall was irradiated with two tangential Co-60 1.25 MeV fields or with one electron beam (8 or 10 MeV). The total dose ranged from 43 Gy to 60 Gy (2 Gy daily). Supraclavicular and axillary lymph node regions were treated with anterior supraclavicular Co-60 1.25 MeV field and posterior axillary field (50-52 Gy in 2 Gy fractions). The median interval between completion of radiotherapy and the assessment was 20 months (8 to 102 months). The assays performed included: anamnesis, clinical examination, chest X-ray, pulmonary function tests, perfusion scintigraphy and blood tests. LENT-SOMA tables of lung toxicity and selected domains of breast toxicity were used and LENT scores were calculated.

Results: Perfusion scintigraphy detected lung injury in 36 patients (66%), but in only 6 cases these findings were accompanied by chest X-ray defects or pulmonary function abnormalities. Impaired perfusion was seen in 81% of patients (9/11) treated with chest wall tangential fields and in 66% (27/41) of those treated with electron beam. Lung symptoms: cough, dyspnea and/or chest pain occurred in 20 patients (37%) and mild saturation changes in 39 patients (72%). All patients (54/54) developed various soft tissue radiation reactions including pain, edema, fibrosis, teleangectasia or lymphedema (LENT-SOMA grade: 1-3).

Conclusions: Perfusion scintigraphy seems to be the most sensitive assay in assessment of radiation-induced lung damage. The implementation of the LENT-SOMA scoring system for late toxicities is feasible in daily practice, but its real usefulness necessitates verification in prospective clinical trials.

354 POSTER

Scalp Cooling as a method of avoiding alopecia in cancer patients receiving chemotherapy

N. de Vries, O.K. Andersen. *County Hospital of Vestfold, Toensberg, Dept. of Oncology*

Aim: The aim of the study was to examine the medical effect of Scalp Cooling treatment, and to measure the patients response to this type of treatment.

Method: At the first course of treatment, epidemiological data, chemotherapy and the chemotherapy agent identified as being responsible for causing alopecia was considered and recorded for each patient. During the first course and all subsequent courses the chemotherapy dose, the time for infusion and the duration of cooling of the scalp before and after the drug infusion were recorded. The patients' own experience of the treatment was also documented. The degree of alopecia was assessed before and after treatment, and was graded in line with WHO's scale of hair loss in the following categories:

1. No significant hair loss.
2. Minor hair loss, not requiring a wig.
3. Significant hair loss, but not requiring a wig.
4. Severe hair loss, wig necessary.
5. Total alopecia, wig necessary.

Our goal was defined at achieving a grading of 1-3 on the scale, resulting in the patient not requiring a wig.

The scalp cooling treatment was carried out as follows. Pre-cooling before cytotoxic agent was used for a minimum of 15 min., and for the entire period of drug infusion. Post-infusion cooling continued for 1 to 2.5 hours after infusion, which was determined on the treatment type and the dose used. The cooling fluid had a temperature of -3.5C to -4.9C during the entire treatment.

Results: In total 54 patients received scalp cooling, 41 with FEC and 13 with weekly Paclitaxel. The total effect for both types of treatment shows that 92% of all patients retained sufficient hair so as to not require a wig. 89% of patients described the treatment as acceptable, with minimal discomfort caused by the longer treatment period. Only 2% of patients considered headaches a major problem, whilst 15% of patients considered the coldness factor a major problem. Headaches are a major problem for only 2% of the patients, whilst the coldness factor was a major problem for 15%.

92% of the group said they found the treatment to be either unproblematic, or only experienced slight discomfort.

Conclusion: Scalp cooling treatment is an effective method for avoiding alopecia in patients receiving chemotherapeutic treatment with courses of FEC or weekly paclitaxel. The patients have minimal discomfort, and there are no significant side effects during the cooling period.

355 POSTER

Complications of tamoxifen in breast cancer patients

S. Haghighat[1], M. Ansari[1], M. Akbari[2], A. Kaviani[1], E. Hashemi[1], M. Ebrahimi[1], E. Fakhrejahani[1]. *[1] Iranian Academic Center for Education, Culture & Research-Tehran University of M, Iranian Center for Breast Cancer; [2] Shahid Beheshti University of Medical Sciences, Surgery Department, Tehran, Iran*

This study was designed to evaluate adverse effects of tamoxifen and their influence on treatment and follow- up of patients with breast cancer.

A case-control study using a questionnaire was conducted on patients attending for follow-up of breast cancer. 101 breast cancer patients with the history of taking tamoxifen (case) were compared with 22 patients who had not used tamoxifen (control). The mean age of case group was 49±10 years and frequency of common complications were: menstrual irregularities (64%), hot flush (42%), bone pain (40%), obesity (39%) and amenorrhea (24%), all being more frequent within the first month of tamoxifen use. Complications like ovarian cysts and vaginal bleeding were mostly delayed until after 12 months of drug use. The mean age of control group was 40±13 years, 89% premenopause and most common complications were: menstrual irregularities (18%), headache (41%), obesity (23%), hot flush (18%) and bone pain (14%). Comparison revealed hat menstrual irregularities ($P < 0.0001$), hot flush ($P = 0.03$) and bone pain ($P = 0.02$) were significantly higher in the case group. Hot flush ($P = 0.001$), Ovarian cysts ($P = 0.04$) and headache($P = 0.05$) were more frequent in premenopausal patients of both groups.

This study has shown the important role of tamoxifen in complications like menstrual irregularities, hot flush and bone pain in patients with breast cancer. It was also observed that duration of tamoxifen use and menopausal status influence these complications.

356 POSTER

Is physical function a more appropriate measure than volume excess in assessment of breast cancer-related lymphoedema (BCRL)?

S. Pain, C. Bainbridge, A. Purushotham. *Cambridge Breast Unit, Addenbrooke's Hospital, Cambridge, United Kingdom*

Introduction: This study aims to measure the effect of BCRL on motor function of the arm, and investigate its impact on the patient.

Methods: A total of 48 women with a history of BCRL were recruited to the study. Arm volume was calculated from circumferential measurements at 4cm intervals up the arm, motor function assessed using a timed test of manual dexterity, and psycho-social morbidity measured with the SF-36 questionnaire.

Results: Dexterity was significantly reduced in the affected arm compared with the normal control arm ($p=0.007$). Significant differences from population means were observed in the physical function ($p=0.0004$) and bodily pain ($p=0.0007$) domains of the SF-36, more marked when the dominant hand was involved. Trends were noted between degree of motor impairment (but not volume excess) and all of the domain scores, although these did not obtain statistical significance.

Conclusion: This study confirms significantly increased psycho-social morbidity in the areas of physical function and bodily pain, and demonstrates a significant impairment of physical function in the affected limb of women with BCRL. It may be that improved physical function is a more appropriate outcome measure than volume reduction in assessment of response to treatment of BCRL.

357 POSTER

Cardiac troponin I in breast cancer patients receiving anthracycline chemotherapy

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Purpose: To asses if cardiac troponin I (cTnI) may be useful as a test for early detection of anthracycline-induced cardiotoxicity.

Patients and Methods: Blood samples for cTnI measurements were collected in 25 breast cancer anthracycline-pretreated patients before and 24, 48, 72 hours after succesive course of chemotherapy containing 60mg/m2 or 50 mg/m2 of doxorubicin. AxSYM Troponin I Microparticle Enzyme Immunoassay was used. All patients are evaluated by doppler echocardiography at baseline, after 4th course, at the end of chemotherapy and within 2 years follow-up.

Results: In 2/11 patients (previously treated with anthracycline-containing regimen) TnI level was detectable (0.2 and 0.3 ng/ml) before adriamycin (ADM) administration and increased (0.4 and 11.1 ng/ml) within 72 hours after termination of ADM infusion. In one of these patients ECG revealed transient ischaemia. Both patients had no echocardiographic signs of cardiotoxicity at 1,5 years and 6 months (before death due to progression), respectively. cTnI was undetectable before and after ADM infusion in the 9 patients who had no electro- or echocardiographic signs of cardiac damage. 14 remaining patients await further evaluation

Conclusion: Early results seem encouraging, however the usefulness of cardiac cTnI as as a tool for identification of patients at higher risk for anthracycline-induced cardiotoxicity needs further invesigation. Continued evaluation is ongoing. Further results will be presented.

358 POSTER

The assessment of late cardiac complications in breast cancer patients after combined adjuvant treatment

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Aim: The aim of the study was to evaluate the myocardial damage, as a late toxicity, in breast cancer patients, treated with mastectomy and adjuvant sequential chemo-radiotherapy.

Material and Methods: Forty seven women (mean age 47 years), with stage II and III breast cancer, were treated with mastectomy and sequential chemo- and radiotherapy. Forty women received chemotherapy including antracyclines, 7- without antracyclines. Radiotherapy included chest wall and regional lymph nodes, the specified dose was 45-50 Gy, administered in dialy fraction of 2 Gy. The echocardiography and the electrocardiography were performed before the treatment and were repeated after a mean time of 17 months, and after a mean time of 33 months after the treatment. The analysis of the those - volume histograms and the depth of the isodose 50% in the heart was performed in every case. The dose of antracyclines was taking into account in all patients.

Results: 7 of 47 patients had abnormal echocardiogram (ventricular dilatation, abnormal Left Ventricular Ejection Fraction). All of them received antracyclines. In 5 of them the echocardiografic deffects were asymptomatic and reversible during 2 years of observation. In 2 patients moderately intense toxicity, with cardiac failure NYHA grade II was observed. The analysis of isodose distribution in all 7 cases excluded radiotherapy as a factor influencing toxicity, but in 2 cases these results suggested a possible connection with antracyclines.

Conclusions: Postoperative radiotherapy, as an element of combined adjuvant treatment in breast cancer, administered in conventional, fractionated doses, causes no clinically significant lesions in the heart during the mean follow-up period of 33 months. Clinically important myocardial changes, noted in 2 patients, seem to be caused by antracyclines, but not by radiotherapy.

359 POSTER

Relations between pain and sensory disturbances after axillary lymph node dissection

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We performed a prospective study to investigate abnormal sensations including pain after breast surgery with axillary dissection. 55 patients, 28 with breast conservative surgery and 27 with breast non-conservative surgery, were interviewed and examined about one year after the surgery. The average days after the surgery were 377 ± 17 days. The age of the patients was between 30 and 81 year old. 67.3% of the patients complained of pain. Abnormal sensations were reported in axillary region (100%), medial aspect of the upper arm (96.4%), thoraco-dorsolateral region (85.5%), lateral aspect of the breast (85.5%), and medial aspect of the breast (27.3%). Hyperesthesia, dysesthesia, paresthesia, and shooting pain was reported more frequently in the axillary region, while allodynia and summation was more frequently found in the medial aspect of the upper arm. The patients with dysesthesia and/or allodynia tended to have pain. In addition, the more types of abnormal sensations they showed, the more frequently they complained of pain.

Our study revealed that all the patients who underwent the axillary dissection appeared to have abnormal sensation(s). Hypoesthesia was found in the axillary region and the medial aspect of the upper arm of 100% and 96.4% of the patients respectively, even one year after the surgery. Many patients also showed the abnormal sensations in these regions. The results of our study suggested that the post mastectomy pain was closely related to the dysfunction of nerves in the affected area, which was described in the definition of the post mastectomy pain syndrome of the international association for the study of pain.

360 POSTER

Effect of tamoxifen on lipid metabolism - clinical and experimental studies

Y. Hozumi[1], Y. Hakamata[2], S. Ogura[1], H. Nagai[1]. *[1] Jichi Medical School, General Surgery, Tochigi, Japan; [2] Jichi Medical School, Experimental Medicine, Tochigi, Japan*

Background: Tamoxifen, a selective estrogen receptor modulator, is widely used to prevent and treat breast cancer. In addition, this agent has been reported to reduce the incidence of the event related to ischemic heart disease. This may involve beneficial effects for lipid metabolism, however, the mechanism responsible for these effects has not been established. Therefore, we investigated the effect of TAM on lipid metabolism, especially on triglyceride metabolism, in clinical and experimental studies.

Results and Conclusion: Total cholesterol and lipoprotein lipase (LPL), a key enzyme of triglyceride metabolism, activity decreased significantly in breast cancer patients treated with tamoxifen. Similarly total cholesterol and LPL activity decreased after tamoxifen treatment in ovariectomixed rats. In addition, tamoxifen reduced LPL activity directly in an in vitro study. Tamoxifen is considered to have an estrogenic action on lipid metabolism. Numerous reports indicate that tamoxifen reduces total cholesterol concentration in clinical and experimental investigations. Several studies, however, reported that tamoxifen might induce hypertriglycedemia and fatty liver. In the present study, tamoxifen reduces LPL activity not only in human but also in ovariectomized rats. We conclude that the decrease of LPL activity is one of the most important factors inducing lipid alteration in lipid metabolism during tamoxifen treatment.

361 POSTER

Demonstration of lymphatic impairment in breast cancer-related lymphoedema (BCRL)

S. Pain[1], A. Peters[2], J. Ballinger[2], R. Barber[2], A. Purushotham[1]. *[1] Addenbrooke's Hospital, Cambridge Breast Unit, Cambridge, United Kingdom; [2] Addenbrooke's Hospital, Nuclear Medicine, Cambridge, United Kingdom*

Introduction: Although impairment of lymphatic drainage is the assumed aetiology of BCRL, very little quantitative data exists to support this. This study aims to apply a new technique for quantification of lymphatic function in the study of this condition.

Methods: A total of 16 women with a diagnosis of BCRL and mean arm volume excess of 11.8% received a subcutaneous depot injection of human polyclonal immunoglobulin G (HIgG) in the 2nd dorsal web-space of each hand, labelled with 111In on one side and 99mTc on the other. Activity remaining at the depot was measured at 15 minute intervals for 3 hours using a scintillation detection probe. Plotting results on a logarithmic scale allowed calculation of the rate removal constant k (units: % min-1). Levels of activity of 111In-HIgG and 99mTc-HIgG in mixed venous blood were measured at the same time intervals.

Results: The mean rate removal constant k was 0.12%min-1 in the affected arm and 0.17%min-1 in the normal control ($p<0.002$). Following an initial lag period of approximately 15 minutes, venous activity levels rose steadily, but always slower from the affected arm (mean % of injected activity per litre at 3 hours from BCRL depot = 1.83, control depot 3.27; $p<0.001$). Differences were more marked when the hand was involved with swelling (k = 0.08 vs 0.14% min^{-1} ($p<0.02$), venous activity at 3 hours = 0.65 vs 2.08% l^{-1} ($p<0.02$) n=6) than when the hand was 'spared' (k = 0.14 vs 0.18% min^{-1} ($p<0.05$), venous activity at 3 hours = 2.47 vs 3.92% l^{-1} ($p<0.02$) n=10).

Conclusion: This study provides quantitative confirmation of significantly impaired lymphatic function in BCRL. Appearance of protein in venous blood provides a more sensitive measure than its rate of clearance from a subcutaneous depot. Rates of clearance and venous appearance were greater when the hand was 'spared', with less significant differences from the control limb. It may be that hand sparing is merely a reflection of degree of lymphatic impairment, rather than due to alternative drainage pathways as has been suggested previously.

Friday, 22 March 2002 16:30–18:00

PROFFERED PAPERS

Detection and diagnosis

362 ORAL

Nurse led follow up clinics for women treated for primary breast cancer: a randomised controlled trial

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Traditional doctor based regular follow up for women treated for primary breast cancer is widely practised over many years, with little evaluation of its role. The clinic visit is to detect recurrence, deal with treatment related morbidity, and provide psychosocial support, but the majority of recurrences are detected outwith clinic visits, by mammography or by the woman herself.

This randomised study compared clinics operated by trained specialist breast nurses with those traditionally run by doctors. 673 women (median age 63) were invited to take part: 58 (9%) refused and 525 had clinic visits within the study period. There were no significant differences between the two groups with regard to Spielberger State Anxiety score at first visit ($p=0.130$) or one month later ($p=0.672$). The Hospital Anxiety and Depression scale (HADS) also showed no differences - 86 women showed psychological distress at visit 1, 49 seen by the nurse and 37 by a doctor. Of these the nurse failed to recognise this in 47%, but the doctors failed in 92%.

Women spent significantly more time with the nurse visits than with the doctors ($p<0.01$). Those seen by the nurse were more satisfied with their visits than those who saw the doctor ($p<0.01$). There was no difference in the detection of cancer recurrence: 13 developed contralateral disease, local or metastatic recurrence, 6 seen by the nurse and 7 by the doctor., but 12 of these were diagnosed by mammogram or interval visit. The nurse diagnosed a coincidental malignant melanoma in 1 patient. We conclude that follow up is effectively managed by trained nurses, with increased satisfaction and quality of care possible. This study defined a new role for specialist nurses in fulfilling psychosocial needs not usually recognised by the medical staff, and is recommended as a novel model for patient support.

363 ORAL

Stage in women screened because of a positive family history is not different from stage in population screening

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Background: Women with a positive family history (FH) for breast cancer are advised to start screening between 25–35 years of age.